Mimulus Memo



MARCH 2020

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EVENTS

MARCH

19 – Chapter Meeting, 6pm Program, 7pm 26 – "Ditch Your Lawn" Bakersfield College, Levan Center 28 – Native Garden Tour

APRIL

2 – "Ditch Your Lawn" Bakersfield College, Levan Center 16 – Chapter Meeting, 6pm Program, 7pm 25 – Field Trip: Kern Canyon

MAY

2 – Field Trip: Blue Rock Spring 9 – Field Trip: Tomo-Kahni State Historic Park 21 – Chapter Meeting, 6pm Program, 7pm

*EVENT = Events cancelled due to COVID-19 precautions as of publication 3/20/20.

Annie Montague Alexander (1867-1950): A Multifaceted Life

Part I: A Woman Ahead of Her Time

by Nancy Nies

A YOUNG WOMAN IN TURN-OF-THE-CENTURY ATTIRE — LONG -sleeved blouse, ankle-length skirt, hobnailed boots — wears a large, holstered pistol on a bullet-studded ammunition belt at her waist. Sitting on ground strewn with pine needles and the occasional

pine cone, she leans against a large boulder to steady her shotgun, and takes aim.

That photo graces the cover of On Her Own
Terms: Annie Montague Alexander and
the Rise of Science in the American West,
by Barbara R. Stein (2001), an excellent
book detailing the life of a remarkable
woman. The first sentence of the bookjacket blurb is enough to show how
extraordinary she would be even
today, not to mention more than
a century ago: "At a time when women
could not vote and very few were involved in the
world outside the home, Annie Montague Alexander
was an intrepid explorer, amateur naturalist, skilled markswoman, philanthropist, farmer and patron of two natural history
museums at the University of California, Berkeley."

On the "Women You Should Know" website, Dale Debakcsy writes that though field scientists may be well known in one discipline, Alexander's work — "so substantial in so many different fields for so long" — made her "central to the development of evolutionary biology and paleontology in the early years of the twentieth century."

A Naturalist by Nature and by Nurture

Born in 1867 in Honolulu, Annie Alexander was the second of five children and the granddaughter of missionaries. Her childhood, spent on the Hawaiian island of Maui, was filled with hiking, swimming, and horseback riding. Young Annie took an early interest in nature, fascinated by the variety and colors of the native plants, trees, and land-snail shells. "On



Cibotium menziesii (Hapuu ii or Hawaiian tree fern), Maui, — **20 November 2009.**

the cool, damp slopes of Haleakala," writes Stein, "the Alexander children . . . spent countless hours playing on the mountain in its wet tangle of ferns and trees."

Samuel Alexander, Annie's father, worked briefly as a teacher before he started growing bananas and sugar cane on Maui. In 1883 he and his business partner, Henry Baldwin, founded what was to become the California and Hawaiian Sugar Refining Company, known nowadays as C&H Sugar. The



Samuel and Martha Alexander with children Wallace, Martha, Juliette and Annie (far right), circa 1882

wealth her father amassed in this venture assured that Annie would be financially independent and free to pursue whatever interested her. What's more, Samuel Alexander, being rather unconventional for his time—what Debakcsy calls "uniquely possessed of no gender expectations for his daughter"—encouraged her in pursuits outside the traditional women's sphere.

When Annie was fourteen, the family moved to Oakland, California, where she attended high school. In 1887, she began two years' study in Massachusetts at the Lassell Seminary for Young Women, a school founded on the radical idea that women, like men, could benefit from advanced studies.

A Taste for Travel and a Penchant for Paleontology

Annie Alexander had inherited not only her father's love of nature, but also his love of travel and adventure. After an 1889 trip to Europe with her family, she remained in Paris to study French and art. The 1890s were a decade of international travel for Annie: a 1,500-mile bicycle tour of England, France and Spain with her father and sister in 1893; a trip to the South Pacific and Southeast Asia with her father and uncle in 1896; and a ten-week camping adventure in Oregon and California with a friend in 1899, taking photos, studying birds, and collecting plants. In Dale Debakcsy's words, Annie "had a planet-sized spirit of adventure, and a profound curiosity to match."

It was in 1901 that Annie began auditing John C. Merriam's lectures on paleontology at the University of California in Berkeley, and, captivated by the subject, began the field work that would become her raison d'être for as long as she lived. That summer she funded and organized her own three-month expedition, accompanied by a female acquaintance, two of Merriam's male assistants and a wagon driver, to the Fossil Lake area of southern Oregon. During the arduous but successful trip, Annie collected over a hundred fossil bones—miniature horse, camel, elephant, rodent and bird—to be donated to the university.

Annie would never have guessed—or approved of the fact—that a photo taken of her on the 1901 trip would find its way onto the cover of her biography, published exactly a hundred years later. She did not like publicity, preferring anonymity whenever possible. (Notes on the photo: Annie's brother had lent her his shotgun so that she could hunt geese, ducks and rabbits to supplement the expedition party's diet of grains and canned food; and knickers would soon replace skirts as her field wear.)

The next two summers, Annie was both sponsor and participant on fossil-hunting expeditions to Shasta



Annie Montague Alexander, 1901

County. Since it would have been unacceptable for her to be the only woman on these trips, a woman companion—a student or graduate student in paleontology—was found for her. On those trips, Alexander was to make significant finds, the first of nine that would eventually be named in her honor.

In 1904 Annie Alexander accompanied her father on a safari in Africa, hunting big game and traveling 800 miles on foot before tragedy struck. Samuel Alexander was critically injured in a rock fall, and died a day later. Annie would later write that her father's death had made her consider her future, and decide to take up collecting West Coast fauna for study, to divert her mind and give meaning to her life. She had started down a path that would eventually lead her to botany . . . and, at least briefly, to Kern County. •

(To be continued in the June issue.)
In Part II: "The Partnership of Alexander and Kellogg"

Chapter Meetings

upcoming TOPICS

Thursday, March 19, 2020 - 7 pm
Presenter: John Kalk
Topic: Ecosystem Recovery in the Chernobyl Exclusion Zone

Thursday, April 16, 2020 - 7 pm
Presenter: Richard Spjut
Topic: Phylogeography of Baja California
Plants and Lichens

Thursday, May 21, 2020 - 7 pm Presenter: Ken Owen Topic: Channel Islands Restoration

Thursday, June 18, 2020 - 7 pm
Presenter: Tim Thomas
Topic: Flora of the Golden Trout Wilderness

Suggestions for presenters and topics? Contact Paul Gipe <u>pgipe@igc.org</u> or Richard Spjut <u>richspjut@gmail.com</u>

All chapter meetings are held the 3rd Thursday of each month usually at 1300 17th Street, Room 1A or 1B, Bakersfield, CA. Check website for any change of venue.

Meeting times:

6 pm — Discussion groups on plant identification and native plant gardening

7 pm — Program presentation



CNPS is the leader for providing reliable information on California native plants and plant conservation. Comprehensive information about California's flora and vegetation communities is available throughout the state for conservation and educational purposes. CNPS's leadership influences personal ethics and actions, as well as public policy for native plant protection.

ADOBE HOUSE

by Don Turkal

7 HAT'S GOING ON AT THE ADOBE HOUSE (aka Peacock House) in Hart Park? Glad you asked!

The current plans are to convert it to a visitor interpretive center focusing on environmental and historical information about the park and Kern River corridor.

Bill Cooper, co-founder, and Craig Smith, president, of the Kern River Parkway Foundation are spearheading this project. Kern CNPS has been invited to join the ad hoc Hart Park Working Group (HPWG) to help with future planning. In addition to Kern CNPS, the group is comprised of: Kern River Parkway Foundation, Sierra Club, Audubon Society, Panorama Vista Preserve, Independent Equestrians, and Cat People.

For now, we have been asked to share native plant selection and garden design ideas for the front garden area. Once the facility is open to the public, each basic support group will be offering their time and knowledge by acting as docents, volunteers, etc., assuring that this needed educational tool is a success for Bakersfield and Kern County. Diane Mitchell and Don Turkal are representing Kern CNPS. Stay tuned for updates. 👌

"I KNEW THAT"

by Yvonne Turkal

HIS NEW COLUMN WILL BE ABOUT EDIBLE plants, with a disclaimer up front: Information for this article is from a book that has a copyright of 1977, and gives historical uses for each plant. You can visit the Internet if you are inclined to investigate further, but be advised that Kern CNPS isn't responsible for anyone's end results.

CALIFORNIA BAY



AKA: California Laurel Bay Laurel. Oregon Myrtle Pepperwood (Umbellularia californica) There are also other species.

In case you want to grow one in your yard, be warned that although it is evergreen and a pretty tree, it can also grow from a shrub to 98 feet tall.

Historical Uses:

- Early Spanish settlers pulverized the leaves for a condiment, while the Cahuillas and other native California peoples used them medicinally.
- Mendocino County Indians used the leaves to repel fleas and also by burning the boughs to fumigate lodgings against colds.
- White settlers adapted one of the native people's ideas of using the leaf oil, but they added lard, and rubbed this new concoction on their bodies.
- Native people roasted the nuts, cracked, and ate them in soups, stews, and meat dishes, but removed the leaves prior to serving the dish.

The wood was light and fine-grained, so it was worked into beautiful bowls. Usually called Oregon Myrtle, it was in such high demand for furniture that consideration was given to the protection of this species.

"I knew that"





Right: Plans for an Interpretive



Building a Corridor — Oak by Oak Thanks to the Crew

by Lucy Clark

FIRST TO BE THANKED IS BILL NELSON, WHO picked the Valley Oak acorns from trees near the Nature Conservancy's Tollhouse Ranch, and germinated them for planting over many months.

The actual planting took three days, February 27, 28, 29, the first being the hole-digging day, led by Bill. The second day, Bill Moffat led the irrigation team, and the third day Zack Principe of TNC taught the team how to carefully plant the seedlings.

Diggers were Bill Nelson, Clyde Golden, Paul Gipe, Fred Chynoweth, and Jon Hammond. The irrigators were Bill Moffat, Don Turkal, and Jon. The planters were Zack, Bill, Don, Clyde, Donna Rodriquez, Lucy Clark, Jon and his 13-year-old daughter, Kiya.

The job was finished by about 1 pm, and some of us went to eat delicious truck-stop Indian food on Hwy. 58, and celebrated the completion of satisfying work! Jon celebrated by writing an article about our work, published in the Tehachapi newspaper.

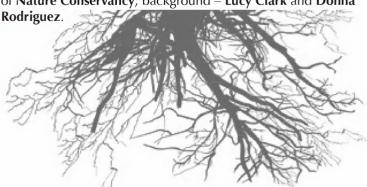
We promise to show you the seedlings, if you join us in weeding the nearby Bakersfield cacti! That day is coming soon, but the date is not determined at this time. ❖

Thank You to:

- ... Dr. Antje Lauer for teaching us even more about something we thought we knew — Valley Fever;
- ... Don Turkal, Lucy Clark, Donna Rodriguez, Bill Moffat, Paul Gipe, Clyde Golden, Zach Principe, Kiya and John Hammond and Bill Nelson for planting Bill's valley oak seedlings at Tollhouse Ranch;
- ... Patty Gradek for chasing down all the details of our Field Trips. 🏚



Planting Valley Oak seedlings (*Quercus lobata*), grown by CNPS member, **Bill Nelson**, on the Nature Conservancy's Tollhouse Ranch preserve: foreground – **Don Turkal** and **Zach Principe** of **Nature Conservancy**; background – **Lucy Clark** and **Donna**



May 16, 2020, Saturday 34nd Annual Windmill-Wildflower Hike

THE KERN-KAWEAH CHAPTER OF THE SIERRA Club will lead a hike among the wind turbines on the Pacific Crest Trail (PCT) at 9:00 am on Saturday, May 16, 2020 near Tehachapi, California.

The Sierra Club's local chapter sponsors the hike, to spotlight a section of the PCT as well as the thousands of wind turbines in the Tehachapi Pass. The event marks the 34nd year of the annual spring hike.

The Windmill-Wildflower Hike is one of the longestrunning such events in the world. Nearly a thousand people, from children to octogenarians, have taken the six-mile walk since the event was first launched.

Note: The hike leaves the PCT trailhead kiosk northeast of the junction of **Cameron Canyon Rd.** and **Tehacha-pi-Willow Springs Rd.** promptly at 9:00 am. The PCT Cameron Ridge segment kiosk is on the south side of Cameron Canyon Rd., 100 to 200 feet northeast of its junction with Tehachapi-Willow Springs Road.

For more information contact Paul Gipe at 661-325-9590.



Dale & Patty Gradek's yard, 2019 Garden Tour

Wildflower Field Trips Spring & Summer – 2020

by Patty Gradek

ERN CNPS FIELD TRIPS ARE OPEN TO ALL. Occasionally, numbers will be limited by the land owners or agencies. We welcome you to join us to see and learn about our native plants and their habitats, to learn to identify plants, or to photograph them. If you are skilled in plant identification, you can help us all learn.

Please always dress in layers, wear boots or shoes you can hike in, and bring food and water. You may also want to bring a hat, sunscreen, binoculars, camera, plant lists and useful references such as **Kern County Flora** and the **Jepson Manual**, or any book you like. We try to meet at a spot where we can park some cars and carpool to our location to save

the air, gas, money and make sure that we will have adequate space to park. CNPS does not arrange car pools; each person does so at the meeting place. If you ride with another driver, please remember to offer to help pay for gas.

All trips are by reservation only, so we know whom to expect, and how many will be participating in each field trip. Each trip will have the contact person listed. Please email the contact person by four days before the field trip and indicate the names of those who will attend. Please also provide a cell-phone number, in case we need to reach you that day, and indicate whether you will be driving a four-wheel-drive, AWD or high-clearance vehicle. We may need to limit participation for some trips if we don't have an adequate number of four-wheel-drive, AWD or high-clearance vehicles for all the participants.

IMPORTANT: If your plans or your party's plans



change and you will not be attending, it is critical — for safety, planning and courtesy reasons — that you call or email the contact person and let them know you will not be there.



April 25th, Saturday

KERN CANYON or SOUTHERN SIERRA with Clyde Golden

Contact: Patty Gradek – <u>pattygradek@gmail.com</u> RSVP Deadline: 8 pm, Tuesday, April 21st

Clyde Golden will be scouting for good wildflower displays despite this relatively dry spring we are having. If anyone can find some lovely flowers, it will be Clyde! When you RSVP, Patty will provide you with the meeting place and time.

Plan on this being a full-day trip. Bring your lunch, water, a sunhat, sunscreen and boots you can hike in.

May 2nd, Saturday

BLUE ROCK SPRING on the Los Padres National Forest with Pam DeVries

Contact: Patty Gradek – <u>pattygradek@gmail.com</u> RSVP Deadline: 8pm, Tuesday April 28th

Botanist Pam DeVries and her husband Otto Gasser will lead us on a field trip to the Blue Rock Springs area, which is off Quatal Canyon Road in the Los Padres National Forest. It's an area most of us have not seen and Pam considers it to be botanically very significant. This will be a full-day trip.

When you RSVP, Patty will give you the meeting place and time in Bakersfield. If you have a four-wheel or AWD, please let Patty know that and plan to drive it. The road is rough but passable. We will plan restroom stops. Bring your lunch, water, a sunhat, sunscreen and boots you can hike in.

Pam and Otto conducted a botanical survey in this area five years ago for the **US Forest Service** and prepared **a lengthy plant list**. For those who would like to see the plant list before the field trip, please let Patty know. It's a short, level walk (probably less than one mile) and there are other nearby areas to explore.

May 9, Saturday TOMO-KAHNI STATE HISTORIC PARK



Tour with docent (moderately strenuous 2 ½ - mile hike with 800-foot elevation gain, at a charge of \$5 per person)

Contact: Nancy Nies – <u>nnies@igc.org</u> RSVP Deadline: 8 pm, Tuesday, May 5

Tomo-Kahni State Historic Park, east of Tehachapi, preserves a Kawaiisu Native American village site and protects its delicate natural features and archeology.

Visiting the park is restricted to **docent-led tours for groups of 12-15 people**. We hope to see a good number of wildflowers in bloom, including an impressive display of the rare **Layia heterotricha** (paleyellow tidytips).

Our docent will provide information on the Kawaiisu and the plants they used for various purposes.

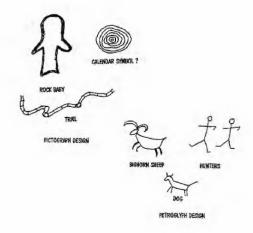


Layla heterotricha (pale yellow tidytips) 2017

Before signing up, please be sure that you are in condition to make this moderately strenuous hike on uneven ground, which will begin at an altitude of 4,500 feet and feature an 800-foot elevation gain. If you'd like to participate, please RSVP to Nancy at nuies@jgc.org by May 5 at 8 p.m. We suggest you RSVP early since the tour is limited to 15 people.

If you RSVP, you'll be given a time and place to meet in Bakersfield on the morning of May 9. We'll form carpools and drive to the Tehachapi Museum for a brief orientation. From there, we'll drive approximately 12 miles to the trailhead. The charge of \$5 per person (in small bills, please) will be payable on the day of the tour. Plan on this being an all-day trip. We predict should arrive back in Bakersfield by 3 pm.

Bring your lunch, water and sunscreen. There are restrooms at the museum, and a chemical toilet at the trailhead. It is recommended that you wear sturdy hiking shoes, layered clothing and a sun hat, since Tehachapi weather in May is unpredictable and can be hot, cold, and/or windy. Visitors are required to stay on the trails, and no firearms, fireworks, dogs or other pets are allowed. •



President's Message: Cryptic Species within the Lichen Genus Niebla homalea (Ramalinaceae)

by Rich Spjut

IEBLA HOMALEA IS A lichen widely distributed in foggy areas along the Pacific Coast, from Mendocino County south to Baja California near Puerto Catarina and off-shore islands Guadalupe and Cedros. The species is one of 42 recognized in the genus as defined by Spjut (1996), in contrast to three recognized by Bowler and Marsh (2004, excluding Vermilacinia). The genus is most diverse in the Northern Vizcaíno Desert of Baja California.

Niebla homalea is distinguished by the **depside divari**catic acid it contains and by its more or less uniform narrow twisting branches with mostly transverse ridging and/or cracks on its outer surface (cortex), the branches all arising from a common basal attachment.

The first two images below show two specimens that I collected south of Stinson Beach on the Point Reyes peninsula in Marin County. They were numbered 17801 and 17802, and three others not shown, 17803, 17804, and 17305, were collected nearby on different rocks, all on the North American Plate, separated from the Pacific Plate by the yellow line on a map of the Point Reyes peninsula. Five more collections, 17806 to 17810, were collected on the Pacific Plate at Point Reyes. One other numbered collection, 17811, came from the Pacific Plate in Monterey County; it

Cryptic species in North Niebla homalea American relate to movement Pacific⁷ of Pacific Plate? Plate **Point Reves** tional Seashore Gulf of the Farollon National Marine Sanct https://pubs.usgs/gov/of/2005/1127/chapter9 4876ITS Locations separated 31 km. Pacific Plate shown here moved nw 22 km in ~1.8 Ma (Jachers et. al. 1998)

was identified *Niebla eburnea* by its branches, only slightly twisted near base and apex, and by its smoother cortex.

The thalli (thallus, a plant body) of 17801 and 17802 were collected near each other on a large rock as shown by a red arrow pointing to their location on a map of the Point Reyes National Seashore. Superimposed on this is a portion of the DNA ITS phylogeny, a clade in some divaricatic acid species divided into several smaller clades labeled with the collection numbers and also the extract numbers assigned by Emmanuël Sérusiaux, Professor at the University of Liège in Begium, who generated the phylogeny. The ITS refers to the Internal Transcribed Spacer (ITS) region of the chromosome employed; generally accepted as the primary DNA barcode identification for fungi. A lichen is a fungus with a photosynthetic partner, either a green algal or cyanobacteria. The fungal DNA of 17801 and 17802, identified from the mor-

Specimens 17801 (left) and **17802 (middle)**: collected south of Stinson Beach on Point Reyes Peninsula. **Specimen 17811(right)**: collected from the Pacific Plate in Monterey County



Photos courtesy Rich Spjut

phology and chemistry of the lichen, were considered to be the same species; however, the DNA suggests they belong to different species.

17802 (*N. homalea*), growing nearby 17801 (*N. homalea*), was found to be more related to 17811 (*N. eburnea*) in Monterey County, whereas 17803 and 17804, near Stinson Beach, formed another related group with 17806 collected at Point Reyes, all being identified *N. homalea*. These relationships are indicated by green arrows for the Point Reyes specimens and red arrows for the Stinson Beach specimens.

Overall the DNA indicates that four species are involved where only two were distinguished. During the past 1.8 million years, the Pacific Plate slowly moved ~22 km northwest, while the North American Plate moved much less in the opposite direction, as glaciers advanced and retreated many times, temperatures cooled and warmed, and sea levels fell and rose. Cooler glacial climates would likely cause Niebla homalea to go south, whereas continental movement probably had little impact on species migration; however, it may have brought more distant species closer together. The Inverness Region on the peninsula was once connected to Tehachapi, and came north probably by means of other fault systems since the early Miocene, or ~23 million years ago. This would have been before Niebla evolved, while fossils of Fremontodendron (flannelbush) are known from the Tehachapi Mountains, dated 17 mya. 🏠

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Map image and references from Geology at Point Reyes National Seashore and Vicinity, California: A Guide to San Andreas Fault Zone and the Point Reyes Peninsula, https://pubs.usgs.gov/of/2005/1127/chapter9.pdf (anonymous) citing the following relevant references:

Jachens, R.C., Wentworth, C.M., and McLaughlin, R.J., 1998, Pre-San Andreas location of the Gualala block inferred from magnetic and gravity anomalies: In Geology and Tectonics of the Gualala Block, Northern California: Elder, W.P, ed., Society of Economic Paleontologists and Mineralologists, Pacific Section, Book 84, p. 27-63.

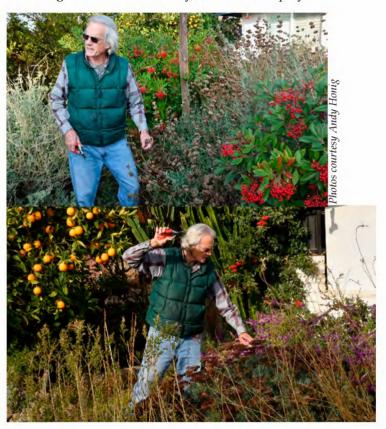
Jachens, R.C., Wentworth, C.M., Zoback, M.L., Bruns, T.R., and Roberts, C.W., 2002, Concealed strands of the San Andreas Fault System in the central San Francisco Bay region, as inferred from aeromagnetic anomalies: In Crustal Structure of the Coastal and Marine San Francisco Bay Region, California, Parsons, T., ed., U.S. Geological Survey Professional Paper 1658, p. 43-61.

Pruning Demonstration January 11, 2020

by Dinah Campbell

D ALE GRADEK, LONG-TIME CNPS MEMBER and, in addition, an active partner in a family-run farm in Sonoma County, gave a group of interested CNPS gardeners some lessons in pruning in general, and native plants in particular.

Demonstrating in his own stunning front yard, Dale gave encouragement and tips. A series of photos documenting the evolution of his yard was on display.



Above: Dale does combat with Cleveland Sage (*Salvia clevelandii*). **Below:** Keep your tools sharp.



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The Kern Chapter of the

CALIFORNIA th NATIVE PLANT SOCIETY KG

California Native Plant Society meets the third Thursday of each month at:

Kern County Superintendent of Schools City Centre, Room 1A or 1B
1300 17th Street, Bakersfield, CA.
Chapter website: <u>kern.cnps.org</u>

The California Native Plant Society is a non-profit organization dedicated to the conservation of California native plants and their natural habitats, and to increasing the understanding, appreciation, and horticultural use of native plants. CNPS has 31 chapters throughout the state and membership is open to all persons — professional and amateur — with an interest in California's native plants. Members have diverse interests including natural history, botany, ecology, conservation, photography, drawing, hiking and gardening. As a Kern County resident, your membership includes Fremontia, a quarterly journal with articles on all aspects of native plants; the Bulletin, a statewide report of activities and schedules; and The Mimulus Memo, the newsletter of the Kern Chapter.

CNPS-Kern Chapter c/o Dinah Campbell, Editor 3806 Dalehurst Drive Bakersfield, CA 93306

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